

**REPLY COMMENTS OF
THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC.
ON E3'S PROPOSED SCOPE OF WORK REGARDING
NET ENERGY METERING COST-EFFECTIVENESS**

November 15, 2012

The Interstate Renewable Energy Council, Inc. ("IREC") respectfully submits these informal comments replying to the opening comments of November 5, 2012 regarding the scope of work proposed by Energy & Environmental Economics ("E3") to perform a study on the cost-effectiveness of net energy metering ("NEM"). IREC participated in the October 22, 2012 workshop on this topic at the California Public Utilities Commission ("Commission") and filed opening comments. Opening comments of various parties addressed the proposed scope of work ("SOW") presented by E3 at the workshop, and IREC responds here primarily to the comments of Pacific Gas & Electric ("PG&E"), whose comments generally reflect positions of the other two investor-owned utilities commenting on E3's SOW.

IREC is a non-profit organization that has worked for three decades to expand consumer access to renewable energy resources through the development of programs and policies that reduce barriers to renewable energy deployment and increase consumer access to renewable technologies. IREC has participated in regulatory proceedings or provided technical assistance to over 40 state utility commissions on net metering and interconnection issues, thanks to funding from private foundations and the U.S. Department of Energy.

I. Introduction

In these comments, IREC addresses four issues raised by the PG&E and one by San Diego Gas & Electric ("SDG&E"). First, IREC supports E3's position that a study of the rate impact of NEM exports is appropriate, countering PG&E's suggestion that such a study is inappropriate. Second, IREC responds to PG&E's assertion that NEM exports do not have renewable energy value. Third, IREC responds to PG&E's position regarding line loss benefits of exported energy, and further suggests that NEM systems create line loss benefits accruing to non-participants. Fourth, IREC questions PG&E's argument that the resource balance year ("RBY") for renewables is further out than even E3 suggests. And fifth, IREC counters the suggestion by SDG&E that solar energy's impact on peak load timing requires study.

II. Analysis of the rate impact of exported NEM energy is useful, responsive to the Commission, and not prohibited by Assembly Bill 2514.

PG&E suggests that analysis of the rate impact of exported NEM energy, as E3 did in its 2010 analysis, is not useful and not called for by D.12-05-036 or AB 2514.¹ IREC disagrees. As thoroughly discussed in opening comments by IREC and others, customers may generate energy for on-site use without NEM, so any rate impact of energy used on-site is not an impact of NEM.

PG&E raises a valid point that it would be difficult to determine what level of on-site generation would exist without NEM, but makes no suggestion regarding how E3 might make such a determination. It is not even clear whether on-site generation would be higher or lower without NEM. On the one hand, the benefit of having a system that exports at times would be diminished, as only avoided cost payments would apply to exports, so there would presumably be less customer-sited generation. On the other hand, in the absence of NEM, customers would have an incentive to alter their load profile to their generation (for residential customers, this might include increased air conditioning mid-day, and setting timers on laundry and dishwashing to run mid-day). This would mean that generation for on-site load might increase in the absence of NEM. With no clear evidence, and the underlying fact that generation for on-site load does not require NEM, it makes sense to continue to treat that part of on-site generation as outside of the NEM costs and benefits.

Further, the fact that E3's prior study looked at exports makes it particularly valuable to look at exports again. Given the flattening of the rate structures for all three IOUs, an apples-to-apples comparison of the rate impacts in 2008 (the year considered in the prior study) and 2011 (the study year for the current study) will be informative.

PG&E suggests that analysis of the rate impacts of NEM is not called for by the Commission by claiming that it is not required by D.12-05-036. What is not mentioned is that D.12-05-036, the decision altering the calculation of the NEM program cap, does not discuss exports at all, but does cite to E3's 2010 study. Finding of Fact number 7 cites E3's calculation of the rate impact of NEM, which was calculated based on NEM exports. In other words, the Commission was not even contemplating an analysis based on all generation when it issued D.12-05-036. And looking back to D.09-08-026, there appeared to be a focus on exports. E3's 2010 study was issued following that decision, and it seems clear that the Commission did not find fault with E3's approach, and explained the approach in its introduction to the E3 study.

Finally, PG&E notes that AB 2514 does not call for an analysis of exported energy, but that is beside the point. AB 2514 calls for analysis of, "all electricity generated by renewable electric generating systems, including the electricity used onsite to reduce a customer's

¹ PG&E comments, p. 1.

consumption of electricity that otherwise would be supplied through the electrical grid, as well as the electrical output that is being fed back to the electrical grid.” By breaking total generation into its parts, AB 2514 can be read to suggest that there are two distinct parts worthy of separate study. In any event, AB 2514 clearly does not prohibit such a study.

III. Without NEM, the Commission would need to do more to meet California’s greenhouse gas goals, so NEM exports have a renewable energy value.

PG&E anticipated an argument raised by the Solar Energy Industries Association (“SEIA”) and supported by IREC, regarding the renewable energy value of exported NEM energy. PG&E assumed that the point of SEIA’s argument would be that there is a societal value to increased renewable energy generation. IREC suggests that PG&E has missed the point.

California has set aggressive goals for the reduction of greenhouse gas emissions, which contributed to both the establishment of the State’s Renewable Portfolio Standard (“RPS”) and other programs to support renewable energy, including NEM. Without NEM, presumably the Commission would need to do something else to achieve the State’s greenhouse gas emissions goals. This might entail establishment of a higher RPS, or some other program. Thus, a proxy for the renewable energy value of NEM exports is the value ascribed to renewable energy under the RPS.

Based on the argument that customers would self-generate in the absence of NEM, though with minimal exports, the renewable energy value of the generation used on-site should not be ascribed to NEM. As well, were NEM customers able to utilize the renewable energy credits associated with those exports, it would constitute double-counting to also assign them a value under E3’s analysis of NEM benefits. However, the Commission has chosen to structure the RPS such that NEM exports are largely unusable, meaning that the renewable energy value of exports is not being counted anywhere. IREC suggests that it should be counted in E3’s analysis, given the current circumstances.

IV. Not only is it appropriate to assign a line loss benefit to NEM exports, but also E3 should consider the line loss benefit NEM confers on energy delivery to utility customers who do not have NEM facilities.

PG&E suggests that exported energy has different line loss attributes than energy used on-site,² which leads IREC to not only counter the claim, but to also suggest a much greater benefit than E3 considered in its prior study. PG&E claims without evidence that “only site-

² PG&E comments, p. 5.

specific analysis can determine whether exported generation increases or decreases line losses.” Obviously, exported generation is used by other customers on the same line; exports do not lead to exports through the substation transformer. This means that losses that occur stepping up voltage from a central generator to a transmission line, losses that occur in the hundreds of miles that centralized generation must travel, and losses as voltage is stepped down through a series of transformers for delivery to the customer’s line are all still benefits of exported generation.

Interestingly, PG&E’s point raises a broader issue. At levels of NEM to be considered in the current E3 study, particularly given AB 2514’s requirement to consider all generation at the level of a fully subscribed NEM program, there will be enough NEM to impact the level of line losses. That means that there will be an impact on non-participants in the NEM program. For example, if there is a statewide peak load of 65,000 MW of at 4:00pm on a sunny day a few years in the future, and there would be 70,000 MW of load were it not for all of the NEM generation at that time, that 5,000 MW difference will be enough to have an impact on line losses. If line losses thanks to NEM are 9.5% instead of 10%, that means that less generation is required to serve the customers who are not participating in NEM. IREC suggests that E3 consider this impact.

V. Use of a RBY further out than E3 has proposed is not appropriate.

PG&E suggests that the appropriate RBY for NEM generation is even further out than suggested by the CAISO analysis that E3 suggests. For the reasons cited in IREC’s opening comments, IREC does not believe that a future RBY is appropriate at all. Instead, PG&E states that, “renewable generators do not have the attributes to avoid the need to acquire [gas-fired generation],” which runs counter to the basic concept of a generation capacity value.

The E3 study determined a capacity value on the very reasonable expectation that system peak loads will continue to occur during afternoon hours, and that the sun will be shining at those times. It is not credible to deny either of these assumptions, and accepting them leads to the conclusion that peak loads will be thousands of megawatts lower in the analysis required by AB 2514 (reviewing all generation in the case of a fully subscribed NEM program). PG&E’s claim that renewable generators do not avoid the need for natural gas-fired generation is not supported and should be ignored.

VI. The impact of solar energy on the timing of peak load does not necessitate study.

SDG&E claims that NEM generation will significantly shift peak loads to evening hours and that E3 should adjust capacity values based on that shift.³ SDG&E puts this as “All the

³ SDG&E comments, p. 7.

CAISO and E3 studies indicate the peak load net of variable renewables will shift to evening hours by as early as 2016.” This seems to account for variable renewables other than NEM; IREC is not aware of studies showing NEM alone leading to after-hours loading, and the impact of renewables on the utilities’ side of the meter should not be viewed as netting against load.

More importantly, it makes little sense to not credit NEM for any shift that does occur. If 1000 MW of solar energy in SDG&E's service territory were to shift peak load past sunset to a peak load that was 400 MW lower than it otherwise would have been, that capacity benefit should be counted. However, we are not considering NEM at this sort of level, and it seems that only marginal shifts are likely, for which the capacity benefit will be similar to what it would be without a shift at all. IREC expects that this analysis would require extensive resources by E3, with little added value.

VII. Conclusion

IREC appreciates the opportunity to submit these comments and looks forward to future discussion of the issues that IREC has raised.

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